

Appendix E – Random Plot Monitoring Methods

Photo Point Monitoring

Photos are taken at each monitoring location to document landscape changes over time. The first photo is taken facing the plot and in the direction of the transect bearing. Moving clockwise, three additional photos are taken every 90 degrees.

Line-Point Intercept/ Belt Density Study Setup

One 300 foot baseline is established starting from the study location stake and running in the direction of an assigned random bearing. Ten 100 foot transects are ran perpendicular to the baseline at predetermined random locations.

Line Point Intercept

Using a 3 mm diameter pointer tapered down to 1 mm, point intercept measurement is collected every 2 feet starting at the 2 foot mark. At each observation point, the pin is dropped straight down until it reaches the ground. The ground level hit is recorded as well as any vegetation and/or litter layer that intercepts the point.

The ground level hit categories are bare ground, gravel, cryptogam, vegetation basal, or bedrock. Bare ground and gravel are delineated through size; mineral earth is considered bare ground when it is less than 2 millimeters diameter. Gravel is separated into two classes: “gravel” (less than 3 inches diameter) and “big gravel” (greater than 3 inches diameter). Cryptogam is any living or dormant lichen, moss, or cryptobiotic crust growing on the soil or rock surface. Bedrock is solid rock or parent material protruding from the soil.

Cover hits are recorded when one of the following categories intercepts the projection of the observation point: any perennial species, litter, and attached litter. Litter is separated into two classes: “little litter” (less than ¼ inch in diameter) and “big litter” (greater than ¼ inch in diameter). Attached litter is dead plant material still attached to a perennial species. Attached litter is also separated into two classes: “herbaceous” (dead plant material less ¼ inch in diameter) and “woody” (dead plant material greater than ¼ inch in diameter).

Belt Density

Walking the line of each transect, density is collected for all perennial plant species growing within the 2 meter belt adjacent to and down-plot of the transect line. Individual plants growing within the 2 meter belt are counted and recorded for each species. The plants must be rooted within the 2 meter belt. Plants that only overhang into the 2 meter belt are ignored. For rhizomatous species such as creosote, multiple plant bases are counted as one individual if they are within 2 feet of each other. Annual species are not included in this count.

Soil Stability

The Soil Stability Test provides information about the integrity of soil aggregates, degree of soil structural development, and erosion resistance (Herrick et al.). Ten soil samples between 6 and 8 millimeters in diameter are collected at the center point of each line point intercept transect. The soil samples are exposed to rapid wetting while a trained observer ranks each sample on a scale from 1 to 6 indicating structural integrity. The average of all ten sample's ranking represents the study location's soil stability rating.

Literature Cited

Herrick, Jeffrey E, et al. *Monitoring Manual for Grassland, Shrubland and Savanna Ecosystems*. Vol. 1, USDA-ARS Jornada Experimental Range, 2009.